



# **Memorandum**

California Public Employees' Retirement System

Date: November 29, 2006

To: Dan Kiefer  
Portfolio Manager, Fixed Income

From: Raymond Venner  
Portfolio Manager, Asset Allocation / Risk Management

Subject: Risk analysis of equity repos

Fixed Income proposes that Securities Lending Investment Policy be revised to allow the use of equities as collateral in repurchase agreements ("equity repo"), subject to the following limitations:

1. The margin percentage (overcollateralization) for equity repos is 105% of the market value of the equity securities.
2. The only eligible equity securities are common stock of companies included in at least one of the following indices: Nasdaq composite, Russell 3000, or the S&P 500 index.
3. The maximum percentage per issuer in any deal is 5% of the total value of equities collateralized of each deal.

Except for the difference in collateral, all the protections in place for fixed income repos would also apply for all equity repos including the eligibility criteria of counterparties, and the use of a triparty agent to ensure correct collateral, prices, and collateralization margins.

Asset Allocation / Risk Management believes that the risk of CalPERS Securities Lending program experiencing a loss with equity repos is very small, because three events, each of which is highly unlikely, would need to simultaneously occur.

Specifically, a loss would occur if the:

- 1) Counterparty fails to meet its obligations, and the
- 2) Parent of the counterparty fails to provide support, and the
- 3) Return on the collateral is either:
  - a) below negative 5% in one day, an event that has occurred fewer than one percent of the days over the last ten years even for relatively concentrated equity portfolios, or

- b) below negative 5% over multiple days and the triparty clearing bank, in breach of its contractual obligations, fails to direct the counterparty to maintain the stipulated margin reserves.

For event 1, we could not identify a single counterparty to repurchase agreements that defaulted on its contract in recent decades. This implies that event 2, failure of parent company to support its broker-dealer subsidiary, has not been tested. However, the parent company has strong incentive to support its broker-dealer if needed in order to maintain access to capital markets.

Finally, event 3, the potential of market losses reducing the collateral value to below loan value has occurred fewer than 1% of the trading days even for concentrated portfolios. Also, to preserve its business, the two US triparty clearing banks (Bank of New York and JPMorgan Chase) have strong incentive to perform their contractual duties of ensuring that the posted collateral meets the eligibility requirements, is market valued daily, and that the collateral value exceeds the loan value by the percentages specified in policy.

Further protections are provided by the proposed requirements that a non rated entity be either a Primary Government Securities Dealer or a bank branch in addition to having a parent entity rated A1/P1 or higher. These requirements result in the elimination of counterparties that are not as well capitalized or have lower-rated parent companies.

If you have questions, please call Ray Venner at 916-795-3418.

Sincerely,

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Richard Roth  
Interim SIO / Senior Portfolio Manager  
Risk Management / Asset Allocation  
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